

## Message Text

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PAGE 01 STATE 305518  
ORIGIN HEW-06

INFO OCT-01 ARA-10 ISO-00 OES-06 /023 R

DRAFTED BY DHEW/ASH/OIH/MKEFAUVER  
APPROVED BY OES/APT/BMP:JFRY  
ARA/MEX:GFALK

----- 037396 /60

R 170013Z DEC 76  
FM SECSTATE WASHDC  
TO AMEMBASSY MEXICO

UNCLAS STATE 305518

E.O. 11652: NA  
TAGS: NA  
SUBJECT: SUMMARY OF KNOWN HEALTH EFFECTS OF CHROMIUM AND  
METHODS FOR EVALUATING CHROMIUM EXPOSURE IN LECHERIA, MEXICO.

ATTN: DR. ABRAHAM FRIEDMAN, SCIENCE ATTACHE

1. THE FOLLOWING INFORMATION ON CHROMIUM TOXICITY HAS BEEN  
DEVELOPED BY THE CENTER FOR DISEASE CONTROL, DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE, FOR INFORMATION AND POSSIBLE  
USE AS THE EMBASSY SEES FIT REGARDING EVALUATION OF CHROMIUM  
EXPOSURE NEAR A FACTORY IN LECHERIA, MEXICO.

2. CHROMIUM IS TOXIC PRIMARILY IN THE OXIDIZED FORM (CR  
PLUS 6) WHICH IS FORMED WHEN CHROMIUM ORE IS HEATED IN THE  
SMELTING PROCESS AND IS PRESENT IN ANY OPERATION WHERE PRO-  
CESSING CHROMIUM IS USED. THE TOXIC  
EFFECTS INCLUDE SKIN ULCERS, IRRITATION OF LINING OF THE NOSE,  
AND PERFORATION OF THE NASAL SEPTUM IN A HIGH PERCENTAGE OF  
EXPOSED PERSONS. LESS COMMON TOXIC MANIFESTATIONS INCLUDE  
KIDNEY DAMAGE, LIVER DAMAGE, LUNG CONGESTION AND DAMAGE,  
ABDOMINAL PAIN AND EYE IRRITATION. CHROMIUM IS A  
CARCINOGEN AND HAS BEEN FOUND TO CAUSE LUNG CANCER AND POSSIBLY  
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CANCER OF THE NASAL SINUSES; LEUKEMIA HAS NOT BEEN REPORTED  
TO HAVE BEEN CAUSED BY CHROMIUM.

3. SOME ABNORMALITIES OF CHROMIUM METABOLISM HAVE BEEN NOTED  
IN LEUKEMIA PATIENTS. CHROMIUM (CR PLUS 6) IS ABSORBED THROUGH  
THE LUNGS AND GASTROINTESTINAL TRACT AND IS EXCRETED IN

THE URINE AND FECES. CHROMIUM CAN BE MEASURED IN HAIR, URINE, AND BLOOD OF EXPOSED PERSONS TO EVALUATE THEIR EXPOSURE: SPECIAL COLLECTION PROCEDURES MUST BE FOLLOWED IF THIS DATA IS TO BE MEANINGFUL.

4. OPTION 1. MEDICAL RECORDS COULD BE REVIEWED TO DETERMINE IF THE ILLNESSES REPORTED ARE COMPATIBLE WITH CHROMIUM TOXICITY. THIS COULD BE ACCOMPLISHED IN A SHORT TIME AND WOULD PROVIDE AN EVALUATION OF WHETHER A HEALTH PROBLEM RELATED TO PLANT EMISSIONS IS LIKELY TO EXIST.

5. OPTION 2: IN ADDITION TO REVIEWING RECORDS, AN EPIDEMIOLOGIC SURVEY COULD BE PERFORMED INTERVIEWING SELECTED RESIDENTS ABOUT THEIR SYMPTOMS AND RELATING THEM TO ENVIRONMENTAL FACTORS.

6. OPTION3: A COMPREHENSIVE STUDY TO QUANTITATE PLANT EMISSIONS, THE ENVIRONMENTAL CONTAMINATION OF INDIVIDUAL EXPOSURE LEVELS, AND HEALTH EFFECTS OF EXPOSURE, INCLUDING CANCER RATES IN THE POPULATION. THIS OPTION WOULD PROVIDE THE MOST DEFINITIVE EVALUATION OF THE PROBLEM AND WOULD PROVIDE OPTIONS FOR PREVENTING FURTHER ILLNESS.

7. CDC HAS AVAILABLE SPANISH-SPEAKING EPIDEMIOLOGISTS WITH TRAINING AND EXPERIENCE IN ENVIRONMENTAL TOXICOLOGY AND COULD CONSULT ON SUCH INVESTIGATION IF THEY ARE DEEMED NECESSARY. PLEASE CONTACT US IF WE CAN SUPPLY FURTHER INFORMATION. ROBINSON.

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## Message Attributes

**Automatic Decaptioning:** X  
**Capture Date:** 01 JAN 1994  
**Channel Indicators:** n/a  
**Current Classification:** UNCLASSIFIED  
**Concepts:** CHROMIUM, PUBLIC HEALTH  
**Control Number:** n/a  
**Copy:** SINGLE  
**Draft Date:** 17 DEC 1976  
**Decaption Date:** 01 JAN 1960  
**Decaption Note:**  
**Disposition Action:** n/a  
**Disposition Approved on Date:**  
**Disposition Authority:** n/a  
**Disposition Case Number:** n/a  
**Disposition Comment:**  
**Disposition Date:** 01 JAN 1960  
**Disposition Event:**  
**Disposition History:** n/a  
**Disposition Reason:**  
**Disposition Remarks:**  
**Document Number:** 1976STATE305518  
**Document Source:** CORE  
**Document Unique ID:** 00  
**Drafter:** ASH/OIH/MKEFAUVER  
**Enclosure:** n/a  
**Executive Order:** N/A  
**Errors:** N/A  
**Film Number:** D760463-1213  
**From:** STATE  
**Handling Restrictions:** n/a  
**Image Path:**  
**ISecure:** 1  
**Legacy Key:** link1976/newtext/t19761232/aaaabbsn.tel  
**Line Count:** 88  
**Locator:** TEXT ON-LINE, ON MICROFILM  
**Office:** ORIGIN HEW  
**Original Classification:** UNCLASSIFIED  
**Original Handling Restrictions:** n/a  
**Original Previous Classification:** n/a  
**Original Previous Handling Restrictions:** n/a  
**Page Count:** 2  
**Previous Channel Indicators:** n/a  
**Previous Classification:** n/a  
**Previous Handling Restrictions:** n/a  
**Reference:** n/a  
**Review Action:** RELEASED, APPROVED  
**Review Authority:** schwenja  
**Review Comment:** n/a  
**Review Content Flags:**  
**Review Date:** 22 JUN 2004  
**Review Event:**  
**Review Exemptions:** n/a  
**Review History:** RELEASED <22 JUN 2004 by chengls>; APPROVED <30 AUG 2004 by schwenja>  
**Review Markings:**

Margaret P. Grafeld  
Declassified/Released  
US Department of State  
EO Systematic Review  
04 MAY 2006

**Review Media Identifier:**  
**Review Referrals:** n/a  
**Review Release Date:** n/a  
**Review Release Event:** n/a  
**Review Transfer Date:**  
**Review Withdrawn Fields:** n/a  
**Secure:** OPEN  
**Status:** NATIVE  
**Subject:** SUMMARY OF KNOWN HEALTH EFFECTS OF CHROMIUM AND METHODS FOR EVALUATING CHROMIUM EXPOSURE IN LECHERIA, MEXICO. ATTN: DR. ABRAHAM FRIEDMAN, SCIENCE AT TACHE  
**TAGS:** SWEL, MX  
**To:** MEXICO  
**Type:** TE  
**Markings:** Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 04 MAY 2006